ON SELF-CULTURE, AND THE PRINCIPLES TO BE OBSERVED IN THE STUDY OF MEDICINE.

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AN

INTRODUCTORY LECTURE,

DELIVERED AT

ST. BARTHOLOMEW'S HOSPITAL,

ON MONDAY, OCTOBER 1, 1849.

BY

FREDERIC JOHN FARRE, M.D. Cantab., F.L.S.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS;
ASSISTANT-PHYSICIAN TO THE HOSPITAL, AND LECTURER ON BOTANY IN THE MEDICAL COLLEGE.

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TO

JOHN RICHARD FARRE, M.D.,

FROM WHOSE EARLY INSTRUCTION

HAVE BEEN MAINLY DERIVED

THE TRUTHS HEREIN IMPERFECTLY RECORDED,

THE FOLLOWING PAGES

ARE DEDICATED,

WITH THE HIGHEST RESPECT AND AFFECTION,

BY HIS SON,

FREDERIC JOHN FARRE.

Mr. President, Mr. Treasurer, and Gentlemen,

For many years it has been customary in this School to deliver an Address, at the opening of the Winter Session, to those gentlemen who are about to commence, or have already commenced, their medical studies under our superintendence.

The honour of delivering the Address has this year been intrusted to me. I should be unworthy of the honour if I hesitated to express the gratification this opportunity affords me. But few gratifications are altogether unalloyed; and the responsibility of advising on such an important occasion as the entrance upon a medical life will not allow me to be free from anxiety.

There are other occasions when we are honoured with the presence of the noble and the learned; when the encouragement of eloquent lips, and, I may add, of bright eyes, increases the value of the prizes won by the industry and perseverance of our pupils. But there is a different pleasure in our meeting to-day. We meet not only those who come for the first time to taste the waters of healing, but many who long ago drank with us from the same fountain, and having found it pleasant and invigorating, now bring their sons to do the same. To us there are few things more pleasing than these periodical reunions. We see that while the heart of our system beats healthily and vigorously within these walls, the streams which it

annually sends forth to supply the wants of our country return to us corresponding streams in the next generation, to acquire the same principles, to receive the same impulse, and to run the same course.

The School of St. Bartholomew, like the venerable Hospital, now in its eighth century, under whose shadow and protection it has risen to its present eminence, is believed to be the oldest medical school in England. Its commencement is unknown, but our records mention the students of 1662. Last year it was the largest as well as the oldest of the medical schools. I feel it to be the duty of the Lecturers of the School to avail themselves of this annual opportunity to return their hearty thanks to the Governors of the Hospital, especially the President, the Treasurer, and the Almoners, who have assisted so largely to place it in this position.

I well remember, when I came to the hospital as a student more than twenty years ago, the single, small, but crowded and valuable museum; the dead-house, without any accommodation except standing-room for a dozen or twenty pupils; and the library, stowed away in a small room adjoining the operating-theatre which then occupied one of the wards on the second floor, and visited by the librarian for an hour once a week. No place was there where the industrious pupil could retire for study, without leaving the hospital, except the dissecting-room or the wards, neither of which was adapted at all times to supply the place of a reading-room. Those were the flourishing days of the billiard-room and the divan. Better accommodation and increased facilities of study have, I believe, created a better taste. Look at the changes that have taken

place since that time. We have gained a medical theatre, a pathological theatre, new and enlarged museums, a convenient library and reading-room, the opportunity of residing within the walls of the hospital, and a dining-hall open to the whole school. All this has been done within the last fifteen years; and if it were possible to obtain more ground for the purpose, I believe there is all the disposition to afford us even still further advantages.

This is a pleaing subject to dwell upon; and if I had no other task but to express our gratitude, and to welcome to our benches those who sit with us this evening, I should feel my task one of unmixed pleasure. But I have also to raise a warning voice for those who are about to enter upon the path that we have trodden before them, and to those gentlemen I must now more particularly address myself.

Much has been done, gentlemen, to remove your difficulties, to lighten your toil, and to encourage your perseverance. But it is easy to go astray; and the duty imposed on me this evening is, to give you the clue that will help you to surmount the obstacles that all must encounter. Herein consists the difficulty and responsibility of a task which I would gladly have left to more able hands; but as it is placed in mine, I can only request your indulgence while I endeavour to accomplish it.

I doubt not that many who are present to-day have well considered the subjects on which I shall dwell, but their importance is so great, that the attention cannot be too often directed to them. I must speak from my own experience. The difficulties which you will have to overcome are the same which I and others who have

preceded you have already experienced; and the guides and assistance which we found, or have since discovered we might have found, are those which we now wish to recommend to you.

You have chosen, gentlemen, an honorable but a difficult profession. Medicine is still very far from being one of the exact sciences. It is built on observation and induction, but both are too often imperfect; imagination frequently supplying the place of one, and hypothesis that of the other: so that it has been said of us in reproach, that nothing is more false than medical theories except medical facts. We have no written infallible guide, like the student of divinity; we have no written code, no authoritative rule of precedents, like the student of law. Our data are ever varying. Age, constitution, habits, sex, state of mind, period of the year, constitution of the year, constantly require a change of treatment. The successful practice of one period is often a fatal practice at another. You must therefore clearly understand the principles of treatment, and everything that is capable of modifying its effect, whether it exist in the patient, or in the circumstances in which he is placed.

The knowledge which directly or indirectly constitutes the science of medicine is acquired by observation, experiment, and calculation. Pure science employs but one method, calculation. With pure science, however, we have little to do. The mixed and applied sciences, to which physics or natural philosophy belongs, are the result of calculation, founded on a few experiments. Natural history, in which we must include the anatomy, physiology, and pathology of man, animals, and vegetables, is based on observation. Chemistry, which

treats of the properties and mutual action on each other of elementary bodies, and their combinations, is a science of experiment; but the atomic theory shows that it also admits of exact calculation. With few exceptions, the principles of healing are founded on experiment; not, however, human experiment only. There are other experiments, older, more extensive, and more varied than those of man, the experiments of Nature herself, who, by placing man in a great variety of circumstances, enables us often, by comparison, to discover the cause of disease, and to determine what is conducive to his wellbeing.

The knowledge acquired by observation and experiment is further increased by reflection. It has been well observed, that we cannot carry about with us all the objects of our senses; but by means of the senses we form in our minds an ideal world, more or less accurately corresponding to the external material world from which our intellectual copy is derived. It is on this interior copy that we usually think and act; and we refresh and correct it whenever we direct our senses to a re-examination of the objects portrayed in it.*

As perception is the first step towards knowledge, and the senses the inlets by which it enters, the *Cultivation of the Senses* is of great importance; the durability and accuracy of our knowledge depending in great measure on the number of senses employed, and the strength of the impressions received; while the strength of the impression is necessarily dependent on the perfection of the sense, and the attention and frequency with which it is exercised.

Impressions on the eye are, of all impressions, the

* Turner's Sacred Hist.

most lasting, and the most easily and accurately recalled. One of the most useful of modern improvements is the copious illustration of scientific works. It has greatly facilitated the labour of learning, and has enabled the student to gain far clearer as well as more durable ideas of the subject of his study. This too is one of the advantages of lectures and demonstrations, that the thing described itself, or, when this is too small, or not to be procured at the time, a drawing of it, is usually brought before the eye. Whenever it is possible, see the reality itself. The reality is as superior to a drawing, as a drawing is to a mere description; but all have their advantage, and all may be used in turn.

In diseases of the chest the ear is of great service in detecting the changes that have taken place, or are taking place, in the heart or lungs, and which are indicated by the production of abnormal sounds, or by the absence of sound when sound should occur.

Very different is the impression on the senses in their natural and their cultivated state. The educated ear of the musician will distinguish and follow each instrument in a large orchestra. Many of us have probably seen the wonderful facility with which the blind will read with their fingers the raised letters of their books. We are in the habit of assisting the senses by the use of instruments. The progress made during the last fifteen years in minute anatomy and physiology has been principally owing to the perfection of modern microscopes, and the laborious investigations made by their means. I strongly recommend you to practise the use of this instrument. But you must bring to the microscope an eye not blinded by prejudice, a mind anxious only for the simple truth; and even then much

practice and experience will be necessary to secure you from error. A similar assistance is afforded to the ear by the stethoscope. The unpractised ear often finds it an incumbrance rather than an assistance; but no one that has patiently employed it, will deny its utility, or reject its use.

We are continually, and often unconsciously, using one sense to assist or correct another. The hearing is corrected by the sight; the sight by the touch. The sight does not inform us of the figure of a solid body; it only exhibits to us a variously shaded surface; and the touch informs us that the shadows and lights correspond to depressions and elevations; and accordingly when we see such shadows, we infer that such depressions and elevations exist. The appreciation of the relative position and distance of objects by the eye is greatly assisted by what is called the muscular sense, the common sensation which accompanies the motion of the muscles of the eye. How imperfect does the sense of taste appear when the sense of smell is impaired. The surgeon operating within the body, or at some depth below the surface, must often substitute the sense of touch for vision, carrying, as it were, his eye at the point of his finger or his instrument. Learn then to recognise parts by their feel as well as by their appearance.

The substitution of one sense for another will be more easily understood when you have learned, what has perhaps not yet occurred to some of you, that in truth it is not the eye that sees, nor the ear that hears, but the brain that sees and hears, and smells and tastes, and feels; the brain, the *sensorium commune*, the common recipient and percipient of all the sensations.

Of all studies, however, the most important to the student of all ages is the *Culture and Discipline of the Mind.* The training of the senses, which enables them to perceive the true and reject the false, is still surpassed in importance by the training of the mind itself to intellectual vigour, and to habits of attention and sustained observation and close inductive reasoning.

These habits can scarcely be formed except in youth. If they are not formed early, habits of an opposite kind invariably grow up destructive to the health of the mind, which even persevering toil will seldom wholly eradicate.

We are scarcely aware of the power we can exercise over the mind. We all know how the body can be improved by training, how the muscles can be developed, the joints strengthened, superfluous fat removed, respiration sustained, endurance fortified. We speak too of a well-regulated mind, and the advantages which it brings to its possessor. But while we admit the advantage, too many of us doubt the possibility, of making it our own. We cannot fix the attention; we cannot prevent the mind from wandering; we cannot exclude intrusive thoughts. Why, this is the very diseased state of mind which arises from neglect of discipline, and from the undue encouragement of more pleasing but less profitable ideas.

All who have studied the capabilities of the mind hold that *Self-culture,* is a very possible, as well as a very necessary, exercise. We can make the mind the subject of its own thoughts; we can discover its defects and weaknesses, its capacities and powers of improvement; we can trace what it has been, what it is, and what it may be; and having done this, we can guide and impel our powers, and employ

various means to assist their development. We can also consider whether our time is allotted to the different subjects which occupy our thoughts in due proportion to their ultimate as well as their present importance. We can review from time to time the grounds of our opinions, and see whether they really warrant the conclusions we have drawn from them, or whether later information, or a more full or candid inquiry compels us to alter them, or whether prejudice, or passion, or interest has biassed our minds; and we should especially beware of that doctrine, whether in science, in ethics, or religion, that man is not answerable for his belief, seeing how much the formation of his opinions depends on his own efforts, and on the character he has given to his mind.

Much of the teaching of philosophy has especially this end in view. Mathematics and logic are chiefly useful to most men on account of the training they give to the mind. By these we are taught to build up our reasoning on sure foundations, to proceed slowly but safely to the true induction, or to show, by the absurdity or impossibility of the result, the error of the original assumption.

How then shall we begin this work of training? In the first place we must set about it in earnest. Conscious of its importance, we must employ with a resolute purpose, all the means at our command.

Let me especially urge on you the importance of *Concentrating the Attention.* Observe the man whose whole attention is absorbed in listening. The earnestness of his attention gives him the same advantage which another ear acquires by education. Not a sound escapes him; every word finds a reaction. Ideas thus

imprinted, are not easily effaced. Such a person will listen to a discourse, and will carry away in his recollection the various statements and arguments, the order in which they were introduced, and their connexion with, and dependence on each other. Another will remember the facts, but forget the reasoning. A third will have but a confused recollection of either. This difference arises, except where there is wilful neglect, from the different power of sustaining the attention. One impression is so deep that scarcely any length of time can efface it; another is rendered permanent only by many repetitions. Some impressions are necessarily strong, others naturally weak; but we have the power of so directing the attention that the strength of the impression almost always depends more or less on ourselves. When age begins to creep on us we are fond of recalling the events of early life, and the strong impressions of youth which remain as if graven on stone; while the fainter impression of recent events are traced in letters of sand, and effaced by the next wave of time.

As I professed my intention of giving the result of my own experience, I will recommend those who feel a difficulty in sustaining their attention, or in keeping the mind from wandering, to adopt a practice almost universally followed, though for a somewhat different object, by the reading men of the University of Cambridge, at which I was educated; I mean the practice of writing from memory all that is to be learned by heart; not writing it once or twice, and correcting it when written, but writing it again and again till it can be written without any error or hesitation. When the mind only is employed, oc-

casional interruptions to its attention are scarcely noticed, but when the hand also is used, no such interruptions can pass unnoticed, and the attention must be continually kept up. When the habit of sustained attention is acquired for one purpose, it will be easily employed for another, and he that has learned to think uninterruptedly while writing, will find little difficulty in listening uninterruptedly to another's discourse. I said that this habit of writing at Cambridge was adopted for another purpose. This purpose is to fix the idea more deeply and more accurately on the memory than it can be fixed by the repetition of words. In verbal repetition we are liable to make omissions and errors without detecting them. On paper this cannot so easily occur, because we can compare our writing with the original. And we should never be satisfied if we hesitate, though there be no omission or error, but continue to write till we find by experience that our recollection is ready as well as perfect. For the same object it is extremely useful not only to inspect drawings but to draw. The minute attention required in drawing is very instrumental in fixing the subject on the memory; and it is the power of recalling to the mind what we have thus pictured there, that is so useful to us.

As a good memory is an invaluable treasure, without which one man may read and study three times as much as another, with less result; every means should be adopted to improve it. One very useful means of assisting it is the association of ideas, the connecting some fact not easily remembered with another fact with which we are familiar, or which makes a readier impression on the memory. This, I believe, was the

object of most of the anecdotes with which some present will remember the very lively lectures of Mr. Abernethy abounded. He expected the anecdote to be remembered, and with it the circumstances which gave rise to it, of which the fact he sought to inculcate was an important part.

But it must never be forgotten that the interest taken in what is to be remembered is the true foundation of memory. The mind must not be passive like inert clay. It must grasp the idea, it must grow upon it, as the tree does on the creeper that entwines it. Nay, rather it must become united with it, as the stock is united with the graft. Then will the engrafted idea grow and increase, still producing its own flower and fruit, but deriving its vigour and permanency from the stock into which it has been implanted.

There is doubtless a difference in different minds, as there is a difference in the same mind, or rather in the mind of the same person at different periods; for the mind changes as much and more suddenly than the body. In some minds too the ideas, though perhaps not stronger, are more available than in others; this is quickness, readiness, presence of mind. And it is a most important quality of memory; for of what use is knowlege, if it is not ready at hand when the occasion arises. This also may be acquired, or at all events greatly improved, by practice. Practice gives us readiness because it arranges our ideas and places those which we more immediately require nearest to the mind's eye, and within our reach. Use it then while the mind is still active. Make the mind master of its ideas instead of the slave of them. This is *Intellectual Culture.*

But there is also a *Moral and Religious Culture.* The grand truth which I wish to bring before you is this, that man is, to use the words of Burke, a "creature of his own making." This power has been committed to us, and we are deeply responsible for its use. If we would discipline our minds, we must also discipline those emotions and inclinations which we call the *Heart.* We must give no indulgence to those passions which Plato calls fevers of the mind. Anger and indignation are capable of producing the most violent effects on the body, apoplexy, jaundice, rupture of the heart; can we doubt that they are at least equally injurious to the mind. We must moreover cultivate a feeling of disinterestedness and good-will to others in opposition to that feeling of self-interest which is ever present of its own accord. And this discipline we must undergo, not only because reason and philosophy teach that there is an advantage in it; not only because we shall thereby benefit both ourselves and others, though this to a reasonable mind is a strong motive; but from a still higher motive, because it is our duty; and because we are commanded to keep the heart with all diligence, for out of it are the issues of life.

Herein consists our responsibility. We are endowed with certain talents, powers, emotions, inclinations. They are powerful for good or for evil, as we direct them. The voice of conscience within us tells us they cannot be safely indulged without control. Our daily experience confirms this truth. The history of mankind in all ages illustrates it. Even a heathen philosopher* could speak thus: "This life is a road that is apt to mislead us and our reason, in all our inquiries; because

* Socrates, Plato's Phedon.

while we have a body, and our soul is drowned in corruption, we shall never attain the object of our wishes, that is, the truth. The body throws a thousand obstacles and crosses in our way; it fills us with desires and fears, and foolish imaginations; it cumbers, troubles, and surprises us in such a manner that we can never arrive at the wisdom we seek till after death." Is there then no sufficient controlling principle? Reason and morality have supplied motives and laid down rules of action, often good, but often also defective; but a higher motive is unfolded to us in the page of Revelation, the principle of willing obedience to the Divine will. Our profession has been adorned by abundance of distinguished men, who have not been ashamed to own this motive, and to show by their conduct that they were influenced by it. Such were, amongst many others, Ambrose Paré, the father of French surgery, our own immortal Harvey, Cheseldon, Boerhaave, Sydenham, Hoffman, Fothergill, Abercrombie, Hey. Such was the late estimable Dr. Hope, and such are many living ornaments of our profession. It was, I presume, for the purpose of encouraging this feeling that the Rev. Hospitaller, Mr. Wix, has on more than one occasion given a prize for the best essay on the Connexion between Medical Science and Revealed Religion.

Several of you are probably now for the first time left to your own control. Many are the solicitations to evil that will beset your path. You will be tempted by your passions, your prejudices, and your imaginations. Evil example and evil advice cannot be entirely excluded. If you yield to these influences, they will gain strength by each victory. If you begin by en-

deavouring to resist and control them, the resistance will soon become more easy, and a habit of resistance will be formed, if it be only begun with resolution from the right motive, and not commenced too late.

I have spoken of the general responsibility attached to the possession of intellectual powers. But in our case there is more than ordinary responsibility; for not our happiness only, but the happiness and the life of many may depend on the use we make of our faculties. We offer ourselves as pilots to steer the sick through the rapids and shallows of disease. How shall we answer for our undertaking, if we are unprovided with a chart; or, having one, are unacquainted with its use? If we are ignorant of the currents, and the rocks, and shoals which beset our course, how shall we give warning of approaching danger, or encouragement to expect an escape? Above all, how shall we satisfy our own conscience if we feel, though no other may know it, that our steering has occasioned the very shipwreck that we were engaged to avoid?

I shall now proceed to consider somewhat more in detail the course of study which has been marked out for you by the medical bodies by whom you are to be ultimately examined for your diploma.

Man is our study, and our object is to keep him in health, and to restore him to health when this is impaired. Man is a compound being, consisting of an organized material and a spiritual part; and this material part consists of the same elements which exist in the earth and the atmosphere in similar or in peculiar states of combination. *Chemistry* acquaints us with the nature and properties and affinities of these elements, and of their combinations; and those com-

pound principles which are found in the animal, but not in the inorganic kingdom, form the subject matter of what is termed *Animal Chemistry*. All these materials are held together, preserved, replenished, moved, and governed by that wonderful power which we call *Life*, which at one time employs the powers of chemistry, at another suspends or counteracts them. This living body is subject to the laws of gravity. It falls to the ground just as dead matter falls, unless it be exactly balanced. Its fluids, moving in living vessels, acknowledge the same laws; and though gravity is only one of the forces which they obey, its influence must never be overlooked. Those of you, gentlemen, who have had the opportunity of studying physics or natural philosophy, will soon discover how necessary is the knowledge of this subject for the comprehension of the movements of the animal machine, and of the circulation of its fluids. But if you have not yet acquired it, you will here have the opportunity of studying *Medical Physics*, or so much of the principles of mechanics, hydrostatics, pneumatics, and optics as is necessary to illustrate your proper subject.

In the first two years your attention will be especially directed to the healthy structure and composition of the human body: its osseous, muscular, vascular, and nervous systems; the blood, the viscera, and the secretions. The dissecting-room will therefore require a large portion of your time. *Anatomy* is taught and illustrated by lectures and demonstrations, but it must be *learned* by the scalpel. Books are useful in guiding our dissection, and in recalling what we have dissected. But the knowledge gained without dissection makes but a defective and fugitive impression. Eighty

years ago dissection was the occupation of the few; the largest medical school in London had scarcely ten dissectors. A wiser plan is now adopted, and actual dissection of the body is strictly required. If we imagine what must be the feelings of the surgeon obliged to operate, perhaps in the presence of others, without having acquired that practical knowledge of anatomy which dissection alone can give, we shall hardly neglect an opportunity which, to those at least who reside in the country, can seldom occur again.

In the study of *Minute Anatomy*, the organization of tissues, the distribution of the smaller vessels and nerves, and the minute structure of all parts, the microscope will be of great service. Drawing will also contribute to impress the memory.

Physiology will next teach you the use and application of the several parts, the various functions by which life is sustained and the human species continued. Here will be abundant matter for contemplation, inquiry, and admiration; the perfection of the means employed, the superabundance of the supply, the securities provided against accidents and injuries, and the compensating powers which are ready to be called forth when required. Everywhere will be seen evidences of deep design, knowledge, foresight, and benevolence, and the most perfect harmony as their result: every function, save one, when performed in health, contributing to, or at least not diminishing, our happiness; and even pain converted into a blessing by being made the warning guardian of our corporeal integrity. In many parts of the human body, especially the brain, the senses, and the viscera, the minute organization is recognised with difficulty; but as the differences

in the structure of animals are regarded merely as modifications of one common type, that which we imperfectly accomplish by laborious dissection in man, is often more fully displayed by Nature in the corresponding parts of animals. And parts which are but slightly developed in man often receive a much higher degree of development in animals, by which their use is rendered more apparent. This typical resemblance, this community of function in man and animals, makes the study of *Comparative Anatomy* both interesting and instructive.

Vegetables appear to the uninformed so entirely different from man and animals, that, however useful *Botany* may be in making us acquainted with many of the substances employed in the treatment of disease, we scarcely expect it to throw any light on our physiological inquiries. But the animal and vegetable have far more in common than external appearances indicate.

Carus, in his treatise on Comparative Anatomy, strongly insists on the importance of combining the study of plants with that of animals, as the most suitable means of arriving at a knowledge of general physiology. "Nature," he says, "always presenting herself to the senses in an apparently complicated form, the result of successive additions to her original fundamental simplicity, it is the important office of science to resolve that complication into the simplicity from which it originated."

Man is the most complex being on the earth. Viewed physiologically, he is half a vegetable; half his functions are vegetative functions. Those which nourish him and continue his species are but repetitions in a more perfect form of the functions of the vegetable.

In both we find an absorbent, a digesting, a respiratory, a circulating, a secreting, and a generative system. But it is in the vegetable that these functions are performed in the most simple manner, uninfluenced by the functions of the nervous and muscular systems which accompany them in animals. There are, indeed, many physiological processes, more or less illustrative of animal life, which can be most easily traced in the vegetable: the development of cells, the absorbent power of cells, the force of absorption, the passage of secretions and generally of fluids through the entire walls of cells and vessels, and never through visible apertures, and the process of reproduction. These are only a few of the corresponding processes in the two kingdoms which illustrate each other. There are other points, not of resemblance, but of difference, in which vegetable physiology will deserve our attention, as illustrating the beautiful harmonies, connexions, and compensations that exist between the different kingdoms of nature, which show them to be parts of one grand scheme. Inorganic matter affords food to plants, and they, on the other hand, afford food to animals. An animal requires for its development, and for the sustenance of its vital functions, a certain class of substances which can only be generated by vegetables. Many animals are entirely carnivorous, but their nourishment is originally derived from plants; for the animals on which they subsist derived their nourishment from vegetable matter. Hence one chief end of vegetable life is to generate matter, adapted for the nutrition of animals, out of inorganic substances, which are not fitted for this purpose; while another great end is to maintain the purity of the air, by restoring to it

the constituents of which animals have deprived it, and by taking from it the superfluous or noxious constituents which animals have added to it.

When you are familiar with the healthy structure and composition and uses of the solids and fluids, you will be prepared to study the alterations in structure and composition, and those disturbances, interruptions, and excesses of the natural processes, which constitute the anatomy and physiology of disease, and which we term *Pathology*. You will learn to distinguish between organic disease and functional disease. You will also carefully observe those secondary abnormal conditions which accompany the disease, and are occasioned by it, following it, as Galen says, in the same way as the shadow follows the body, and which being perceptible to the senses are called symptoms; and when they throw light on the past, present, and future state of the disease, are termed signs, as the diagnostic signs, which declare the nature of the disease; and the prognostic signs, which indicate its result.*

These should first be studied in the surgical wards, because the sign and the thing signified, that is, the disease, are there at the same time brought under the cognisance of the senses. There you may observe the progress of cancer, and the peculiar lancinating pain occurring in paroxysms, and the pale leaden or straw coloured complexion, which are characteristic of it; you may see the formation of abscess, the shivering which occurs at its commencement, and the hectic which accompanies its progress; you may watch inflammation terminating in gangrene, and notice the fœtor, the sudden cessation of pain, and the extreme prostration;

* Schill's Semeiology.

and when afterwards you recognise, in the medical wards, the lancinating paroxysmal pain, and the peculiar pallid hue, or observe the shivering and the hectic, or the sudden cessation of pain in an inflamed organ, accompanied by prostration, you will remember that these are signs of cancer, and suppuration, and mortification.

Many, perhaps most diseases, are more or less hidden from the eye during life, and are only recognised by their symptoms. The accuracy of our diagnosis can only be positively determined by examination of the body after death. The practice of performing these examinations in hospitals and elsewhere has given the moderns great advantages over the ancients, to whom such modes of investigation were absolutely prohibited; and our diagnosis is consequently far more correct and precise. The *Pathological Theatre*, or the *Dead-house*, where these investigations are conducted, will amply repay you for all the time and attention you may devote to it.

If the pencil was useful before, it will be ten times as useful now; for we have plenty of illustrations of natural structure: so that the chief use of drawing healthy parts is, as I said, more strongly to impress the memory. But disease is continually new and varying; and, as the appearance of diseased parts quickly changes after death, the pencil of the practitioner is frequently the only one that can preserve it.

As far as diseased parts can be preserved, so as to exhibit the altered structure, it has been done in the *Pathological Museum*, where about 2000 specimens, the greater part collected by the labour of Mr. Abernethy and Mr. Stanley, have been classified, and will be

found to exhibit nearly all the organic diseases to which the body is subject.

While you are watching disease you will also have the opportunity of seeing its *Treatment* and of learning the nature of the reparative process, the physiology of reparation. It is not my intention to-day to point out to you the books from which you will derive information on this or other subjects; but I cannot help alluding to the valuable and original Lectures which have been this year delivered by Mr. Paget, on this subject, at the College of Surgeons, and which have just been published.

You will also learn the nature and properties of medicinal bodies, whether derived from the animal, vegetable, or mineral kingdoms, which are included under the head of *Materia Medica,* and for a thorough knowledge of which a previous acquaintance with chemistry, comparative anatomy, and botany will be requisite.

Pharmacy acquaints us with the mode of preparing and exhibiting these articles. And their nature and properties, the mode of exhibiting them, their countervailing action, and the reparative process, together constitute the science of *Therapeutics.*

Here, too, you will find the advantage of first observing the treatment of external disease, and the visible alterations produced by treatment. Diseases of the interior of the eye, especially of the iris and inner surface of the cornea are very instructive to the student because they afford the opportunity of watching internal diseases. I am, therefore, happy to be able to state that two wards are henceforward to be devoted to diseases of the eye, by which arrangement you will have the opportunity of comparing diseases which are often

confounded in consequence of the number of tissues occurring in one small organ.

Finally, let me again repeat it, the bedside and the dead-house are the school of medicine. Books cannot enter into all the varieties of disease, nor are diseases so distinct and well defined in nature as they are there laid down for us. Books can but give us the general outline, the minuter features and differences must be filled up by ourselves.

What drawing is for anatomy, the recording of cases is for therapeutics. The more zealous students will employ a portion of their time as dressers in the surgical, or as clinical clerks in the medical wards. But all cannot do this. All, however, may and should keep a record of cases, without which few cases will be remembered sufficiently accurately to serve as a guide for future practice. It is not the number of cases, but the accuracy and orderly manner in which they are recorded, that is most important. Some practice is required to accomplish this: symptoms must not be put down without order, but so arranged that the mind may easily and clearly comprehend the whole case.

Perhaps I need scarcely have dwelt on the importance of studying Surgery before Medicine. For the greater obscurity of the latter, I fear, deters many from devoting to it a proper proportion of their time. A sad mistake! for, although a larger proportion of the hospital is devoted to surgical cases, you will find in practice that the majority of your cases will be medical, and will deeply repent your neglect hereafter, if you do not embrace the present opportunity.

Another most important branch of study is *Midwifery*

and the *Diseases of Women*. Last year these lectures were delivered conjointly by Dr. Rigby and Dr. West. Dr. Rigby, having served the School earnestly and even laboriously for eleven years (for few other lecturers on midwifery delivered a summer as well as a winter course), has now quitted us, leaving behind a lively recollection of the soundness of the matter he taught, and the impressive manner in which he conveyed it: but leaving also his late coadjutor, now his successor, Dr. West, who now holds that position in the school of his Alma Mater, to which his singular industry as a pupil, his upright conduct, and his eminent talents and reputation as a teacher, have justly advanced him.

I am here reminded of another instance of the readiness with which the authorities of the hospital promote in every way the objects of the school.

We have hitherto been compelled to look to other institutions to supply our students with opportunities of attending women in their confinements. But a recent regulation of the hospital, emanating from the Treasurer and Almoners, allows poor married women to apply to the hospital for attendance at their own homes, and for the ordinary medicine required; so that there can be no want of ample opportunity to acquire practical experience in this department. And to facilitate the study of uterine and other diseases peculiar to women, one of the wards has been specially assigned to the reception of these cases.

One of the last subjects you will take in hand is *Forensic Medicine*, or *Medical Jurisprudence*, which embraces all the medical points which are liable to be the subjects of investigation in a court of law, as, for instance, the evidence of poisoning, of death by violence,

personal identity, capabilities and responsibilities of the insane, and public health.

I have barely alluded to the various subjects between which your attention will be divided during the next three years; and yet their number and extent may appear rather formidable. But they are very far from being equally important. All are useful; but while some directly lead us to the grand object we have in view, the maintenance and restoration of health, as anatomy, physiology, medicine, surgery, midwifery, and pharmacy; others, as natural philosophy, chemistry, comparative anatomy, and botany, only indirectly contribute to this end. The former, especially medicine, surgery, midwifery, and perhaps pharmacy, will be the business of your lives, and the knowledge, which with all your labour you will acquire here, will need to be continually renewed, increased, and corrected.

If you are faithful and careful observers of nature, and no others can make really great practitioners, your daily practice will bring a daily increase of knowledge. But you must have first laid a sound foundation; you must have distinct objects; you must aim at discovering what we term the indications of treatment; the several objects which ought to be accomplished in order to the removal of the disease.

Instead of making study more laborious by a moderate infusion of science, you will, on the contrary, lighten it, and make it more agreeable. The great end should be a practical one, but the means of accomplishing it must be scientific, or the end will be imperfectly attained.

The routine practitioner who disregards this, or from want of time neglects it, who views medicines as only

so many specifics for special diseases, will close his course as he commenced it, untaught by experience, unimproved by years of practice. Let your course be different. Your present object is to acquire principles. Practice will make you daily more and more expert in applying them.

But anatomy and chemistry, and the less important, or, as we call them, auxiliary sciences, you will probably have little opportunity of learning after the duties of practice have commenced. Study them therefore now; only study them, not for their own sake, but always in subservience to medicine. Regard them as means to an end. It was because undue importance was attached to some of these subjects, that we have had chemical physicians and mechanical physicians, and that at the present time there may be found some who reason about the action of remedies, as if life was not a distinct agent, and nervous power merely galvanism, and as if chemical substances always produced the same action on living bodies as on dead ones.

In your attendance on lectures there is one error, by no means uncommon, which I am very desirous of guarding against, an unwillingness to ask for explanation from the lecturer, arising from the apprehension of giving trouble. If my own feelings are similar to those of other lecturers, as I fully believe they are, I may venture to say that those gentlemen who entertain this apprehension have very little idea of the feelings of a lecturer. Anxious to make his subject understood, he feels, and must feel, gratified by any interest exhibited by his pupils; and nothing can be more unsatisfactory to him than indifference on their part. He may occasionally be unable to give up any time to

post-lecture explanations; but unless this is the case, he will always feel gratified at having the opportunity of correcting what has been misunderstood, and of replying to objections to what he has asserted.

Although I have spoken lightly of that learning which is acquired solely from books, when it is substituted for that which may and ought to be gained by observation, I hold books, properly used, to be of immense use. We are not indeed to be the blind followers of our predecessors, as if we had not the same senses through which they obtained their knowledge. We are carefully to compare the teaching of books, and the teaching of lectures with the teaching of Nature. It was the neglect of this practice that kept the world for above a thousand years bound in blind idolatry to the doctrines of Aristotle. The greatest minds have erred, and will err. The question, "What is truth?" will probably never be fully answered in this world. We shall continue to see, as our ancestors saw, darkly. Our senses are incapable of receiving, and our minds of perceiving, the whole truth. But still let us constantly endeavour to clear our mental vision, and to advance toward the truth, though it be at an infinite distance from us. The great minds which have existed before us, would have advanced still further, had the same means of observation which we possess been within their reach. Let us not stand where they stopped. Let us lean on them for support, but not chain ourselves to them. See what the microscope has done for minute anatomy and physiology! what a world of new facts it has disclosed in the last fifteen years! What a far larger world is yet to be discovered!

As new facts are discovered, and Nature is viewed under new aspects, we are often enabled to correct inductions from fewer and earlier facts, or facts less correctly understood or observed. But, on the other hand, the power of generalizing belongs to few, and the best and largest observers do not always possess this power in the highest degree. The suggestions and ideas of a great mind generally contain more truth than the conclusions of a little one. Be not then hasty to correct, or even to dispute, the opinions of others, especially received opinions. Multiply facts, and be sure that they are facts. View them under every possible variety of circumstances, and when you cannot succeed in proving your own opinion wrong, it will then be time to begin to think that it may be right. With this feeling of respect for the opinions of others, especially of those who are esteemed the lights and fathers of our profession, and with the determination at the same time constantly to observe Nature for yourselves, books will afford you the most valuable assistance. By their means you may call the dead from the grave; you can, at a wish, bring to your side those who are living in distant countries; you can walk with them, carry them home with you, take them into the country, inquire of them, listen to them, or leave them at your pleasure.

There are peculiar advantages in studying the treatment of disease in an hospital. The comforts and conveniences of an hospital, the strict regulations, attention, and order, the lofty apartments, ventilation, and cleanliness, remove so many of the evils which complicate sickness in private life, and retard recovery, not only in the lower, but often also in the middle and

upper classes, that the results of hospital treatment are far more decided and trustworthy. The opportunity of comparing many cases of the same disease, of observing the difference between diseases nearly allied, and of examining at some period or other of your three years' pupilage, almost every disease that you will have to treat hereafter, and of observing the diseased organs after death, are advantages peculiar to a large hospital.

Should the cholera, which seems to be now retiring from us, again visit us with the same severity that has characterised it this year, what an advantage it will be to some of you to have had the opportunity of witnessing between 400 and 500 cases of this disease in every stage, from the commencing diarrhœa to the deathlike collapse, or the equally fatal consecutive fever. And here let me add, that all of you may find security in the fact, that not a single case of cholera has occurred among the pupils, though many have continued their attendance through the whole summer.

The *Hospital* contains nearly 600 beds, and receives during the year about 6000 in-patients, while the out-patients amount to nearly 66,000.

The *Collegiate Establishment,* which affords accommodation to about thirty students, is now so well known, and answers the purpose of its foundation in so satisfactory a manner, that I only mention it to say what we all feel, that our anticipations have been fulfilled, and that it *has* eminently contributed to improve the character of the medical student, and has spread abroad a feeling of industry, union, and fellowship, and regard for the honour and prosperity of the school.

To afford to the students the same opportunity

which is provided by the several colleges of our Universities, an early *Morning Service* is performed daily in the Church of the Hospital during the winter and summer sessions.

The *Library* contains the most valuable works on medicine, surgery, and general science, and many others in the departments of religion, history, and general literature. These may either be perused in the reading-room, or removed to the residence of the subscribers.

During the last fifteen years, *Prizes and other distinctions* have been awarded by the President, the Treasurer, the Hospitaller, and the Medical Officers and Lecturers, to those who, by competition, have proved the superiority of their attainments; and to these have since been added scholarships. 250 gentlemen have obtained prizes, besides honorary certificates, and some of them have obtained not one prize only, but ten, twelve, and even fifteen prizes in the different departments; and of these 250, eight are now lecturers, or hold other medical appointments in the hospital or school, and eight others hold similar appointments in other hospitals. Here, then, is a further inducement to application. I do not mean the mere prize, but the honour, the recorded distinction, which may be honorably and proudly referred to at any period, in testimony of industry and ability.

I could wish, indeed, that both the prizes and the competitors were still more numerous, and that the whole system could be more assimilated to the practice of the colleges of our old Universities, where not a few, but all, are annually examined, and classified according to their ascertained merit; so that the position itself is

a prize, their respective positions depending on their knowledge, not of one subject, but of the whole range of subjects in which they have been instructed. This, I confess, is the prize system I desire to see, modified, of course, to suit the circumstances of our schools; but such a system could only be carried into execution under the regulations of the examining bodies.

After the termination of the ordinary period of study, many gentlemen still continue to pass some time in the metropolis. To these it will be very advantageous to examine the museums of other hospitals, and to take notice especially of the rarer specimens that are not found in the museums of their own. The opportunity should also be taken of observing the treatment and operations of other hospital physicians and surgeons who are held in repute.

Remember the exhortation of Bacon: "Think nothing done while anything remains to be done." Yet when you have done all that it is in your power to do; when by observation, and reading, and meditation, and inquiry, you have availed yourselves of your opportunities to the utmost, do not forget the last saying of La Place, so well responded to by Newton shortly before his death: "What we know is little, what we are ignorant of is immense."

You may smile at the self-complacency of the copper-coloured Indian of Franklin's Journey, who thought it strange that he had never met any one who was equal in sense to himself; but you will rather admire and imitate the modesty of Socrates, who, when the Delphic Oracle pronounced him the wisest of men, declared that his wisdom consisted in knowing his ignorance.

When you have changed from the pupil to the prac-

titioner, ever keep this truth in your mind, that it is Nature, not medicine, that cures. There are a few medicines which, by their chemical or mechanical action, may afford direct relief, such as those which neutralize or cover the sources of irritation; but in nearly all cases medicine merely induces certain actions, or cessation or diminution of actions, by which means the cure is effected. The office of medicine, and of all the appliances of our art, is to assist Nature, to remove impediments out of her way, to enable her to do what she cannot do alone. When, therefore, Nature is equal to the emergency, we should not officiously interfere. A practitioner may show his judgment as much by abstaining as by acting; like Fabricius, he may restore by delay.

Another important point is to have a right conception of what Nature, when assisted by medicine, *can* perform, to distinguish between the curable and the incurable. Many a life, which might have continued in tolerable comfort for many years, has been sacrificed by attempting to do what was impossible. Many a constitution has been ruined by the means employed for the removal of a far less evil.

The experience we have just had of cholera shows us how utterly inefficacious, even the most powerful means are when the body is not susceptible of their influence. The same disease has also afforded us glaring examples of the difficulty of forming a just estimate of the value of our mode of treatment, until it has been tested by others; the practice, which some have vaunted as infallible, having in other hands proved to be useless or worse than useless.

Within the last few days a new theory has sprung

up, the fungus theory. The facts on which it is founded, rather than the theory itself, have just been laid before the profession by Dr. Brittan, with great modesty and caution. There are no hasty conclusions, no sweeping assertions, no incautious promises that the new discovery will conduct us to a successful treatment of the pestilence. This is as it should be. The supposed fungi and the disease may possibly stand in the relation of cause and effect, and yet the cure of the disease may be as far from us as ever.

But it is time that I should conclude this Address. It has been a fashion with some who have belonged to it to decry the medical profession, to say that the golden age of medicine is past, that it is no longer as honorable an occupation for a gentleman as other professions. Less honoured in public it may be than other professions, but scarcely less esteemed and honoured in private, less influential, or less capable of affording opportunity for the exercise of the higher faculties of the mind and the more noble sentiments of the heart.

It is difficult to say on what the success of medical men sometimes depends. A few fools and a few knaves succeed, and a few men of education fail, for education alone is not sufficient. But the industrious and persevering student, who carries his industry and perseverance into practice, who is governed by high moral and religious principles, is guided by prudence and an ordinary share of intelligence, is kind, attentive, gentle, and gentlemanly, has seldom been disappointed. He may wait some time for success, but it *will* come. The path of duty may be long, but the reward is almost inseparably attached to it.

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